MS.

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,097	09/21/2000	Kumi Jinzenji	10746/21	6354

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EXAMINER
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ART UNIT	PAPER NUMBER
2672	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

MS.

	Application No.	**Applicant(s)**
Office Action Summary	09/667,097	JINZENJI ET AL.
	Examiner	**Art Unit**
	Motilewa A. Good-Johnson	2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2000* .

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,20 and 22-30* is/are rejected.

7)☒ Claim(s) *17,19 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   This office action is responsive to the following communications: Application,

filed on 09/21/2000; IDS, paper #2, filed on 09/21/2000.

2.   Claims 1-30 are pending in this application. Claims 1, 3, 5, 7, 9, 10, 12, 13, 15,

16, 18, 20, 22, 24, 25, 27, 28 and 30 are independent claims. No claims have yet been

amended.

3.   The present title of this application is "Method for separating background sprite

and foreground object and method for extracting segmentation mask and the apparatus"

(as originally filed).

Priority

4.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) do not apply to the examination of this application as the application

being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35

U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5.   Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Crinon

et al., U.S. Patent Number 6,249,613, "Mosaic Generation and Sprite-Based Coding

with Automatic Foreground and Background Separation", class 382/236.

       As per independent claim 1, a foreground object and background sprite

separation and extraction method for extracting . . . comprising the steps of: obtaining a

global motion for transforming a coordinate system between a reference . . . ; mapping

an original image corresponding to said frame into a reference coordinate system . . . ;

generating a provisional sprite . . . ; cutting out a first image . . . using said global

motion; obtaining a difference image between said first image and said original image;

extracting a foreground object image . . . and extracting other region as a background

image; mapping said background image . . . Crinon discloses segmenting foreground

and background objects, coding in global motion parameters, col. 2, lines 37-55. Crinon

further discloses reconstructing a sprite for isolating the object having the most motion

in the video sequence, col. 3, lines 23-35.

       With respect to dependent claim 2, cutting out a second image from said

background sprite . .. ; obtaining a difference image . . . ; extracting a foreground object

image as a region in said difference . . . Crinon discloses in figure 8.

       As per independent claims 3 and 5, they are rejected based upon similar rational

as above independent claim 1 respectively.

       With respect to dependent claims 4 and 6, they are rejected based upon similar

rational as above dependent claim 2.

As per independent claim 7, a segmentation mask extraction method . . . comprising the steps of: receiving a foreground mask image . . . ; providing a first value as an alpha value . . . in each of the first macro-blocks . . . ; providing said first value as said alpha value to all shape pixels in each of second macro-blocks . . . ; and outputting said segmentation mask. Crinon discloses first and second macro-blocks tagged as foreground and background objects, figure 9, col. 9, lines 42-67 and in col. 10, lines 1-30.

With respect to dependent claim 8, receiving each of third macro-blocks . . . as said background part; and providing said first value to said third macro-block . . . Crinon discloses a binary segmentation map and further using a neighborhood of macro-blocks around a macro-block of interest, col. 9, lines 20-28.

As per independent claim 9, a segmentation mask extraction . . . comprising the steps of: receiving a foreground mask image; generating a number map . . . ; initializing a foreground map; providing a predetermined value to each of positions in said foreground map . . . ; providing said predetermined value to each of position in said foreground map . . . ; and generating said segmentation mask . . . Crinon discloses generating macro-blocks having multiple local motion type vectors and further having macro-blocks as foreground only, background only, and foreground or background, col. 2, lines 37-67.

As per independent claims 10 and 13, they are rejected based upon similar rational as above independent claim 7.

With respect to dependent claims 11 and 14, they are rejected based upon

similar rational as above dependent claim 8.

As per independent claim 12 and 15, they are rejected based upon similar

rational as above independent claim 9, respectively.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 16, 18, 20, 22-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wang, U.S. Patent Number 6,256,409, "Method for Determining a

Correlation between Images using Multi-Element Image Descriptors", class 382/170.

As per independent claim 16, a segmentation mask extraction method . . .

comprising the steps of: obtaining said difference image by calculating an absolute

difference . . . initializing an energy map for each macro-block of said difference image;

calculating energy values for said each macro-block; obtaining an average of said

energy values; calculating a foreground ratio . . . ; and generating said segmentation

mask . . . Wang discloses an energy map, feature vector or image descriptor to

describe multi-band images or the correlation between a first image and a second

image, col. 5, lines 12-59. However, it is noted that Wang fails to disclose representing

an energy map as a macro-block for each different image. It would have been obvious

to one of ordinary skill in the art at the time of the invention to include macro-blocks as

image descriptors in the invention of Wang to further describe the correlation of the first

and second images for masking or performing image matching.

As per independent claims 18 and 20, they are rejected based upon similar

rational as above independent claim 16.

As per independent claim 22, a segmentation mask extraction method for

extracting a segmentation mask . . . comprising: a first step of regarding each of first

macro-blocks as the foreground when an energy value of said first macro-block which is

obtained . . . ; a second step of regarding each of second macro-blocks as the

foreground . . . Wang discloses an energy map, feature vector or image descriptor to

describe multi-band images or the correlation of a first image and a second image.

However, it is noted that Wang fails to disclose representing an energy map as a

macro-block for each different image. It would have been obvious to one of ordinary

skill in the art at the time of the invention to include macro-blocks as the image

descriptors disclosed in Wang to further describe the correlation of the first and second

images for masking or performing image matching.

With respect to dependent claim 23, iterating said second step for predetermined

times. Wang further discloses re-processing and re-examining the image descriptors,

col. 21, lines 4-17.

As per independent claim 24, Wang further discloses comparing the image

descriptors and categorizing the different image descriptors and belonging to a different

image category type, col. 17, lines 32-67. However, it is noted that Wang fails to

disclose representing an energy map as a macro-block for each different image. It

would have been obvious to one of ordinary skill in the art at the time of the invention to

include macro-blocks as the image descriptors disclosed in Wang to describe the

correlation of the first and second images for masking or performing image matching.

As per independent claims 25 and 28, they are rejected based upon similar

rational as above independent claim 22.

With respect to dependent claims 26 and 29, they are rejected based upon

similar rational as above dependent claim 23.

As per independent claims 27 and 30, they are rejected based upon similar

rational as above independent claim 24 respectively.

Allowable Subject Matter

8.   Claims 17, 19 and 21 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

9.   The following is a statement of reasons for the indication of allowable subject

matter: The prior art cited in its entirety fail to render obvious dividing an energy value

by an average to obtain the macro-blocks to represent the energy values in the

foreground and background maps.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

6,411,326   Tabata   348/47   06/2002   05/1998

     Stereo image display unit.

6,259,828   Crinon et al.   382/305   07/2001   01/2000

     Sprite-based video coding system with automatic segmentation integrated into

coding and sprite building processes.

6,205,260   Crinon et al.   382/284   03/2001   12/1997

     Sprite-based video coding system with automatic segmentation integrated into

coding and sprite building processes.

6,088,392   Rosenberg   375/240.03   07/2000   05/1997

     Bit rate coder for differential quantization.

5,778,098   Lee et al.   382/236   07/1998

     Sprite coding.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Motilewa A. Good-Johnson whose telephone number is

(703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM -

5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 872-9314

for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 306-

0377.

                                                        Motilewa A. Good-Johnson
                                                        Examiner
                                                        Art Unit 2672

mgj
November 1, 2002

                                            MICHAEL RAZAVI
                                    SUPERVISORY PATENT EXAMINER
                                      TECHNOLOGY CENTER 2600